

W5YI

Nation's Oldest Ham Radio Newsletter

REPORT

Up to the minute news from the world of amateur radio, personal computing and emerging electronics. While no guarantee is made, information is from sources we believe to be reliable. May be reproduced providing credit is given to The W5YI Report.

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March 15, 1995

Long Duration SAREX Mission in Orbit

The Space Shuttle Endeavour made a spectacular liftoff from the Kennedy Space Center March 2nd, initiating what promises to be the longest space shuttle mission to date. The STS-67 Space Shuttle mission was delayed approximately 1 minute from its planned 6:37 UTC liftoff time due to some questions regarding the shuttle's cooling system.

Launch controllers found a clearing in the overcast sky and sent Endeavour on its way at 1:38 AM (ET). Endeavour remained visible in the clear night sky for more than 500 miles as it soared over the Atlantic Ocean. It slipped into orbit 8 1/2 minutes after liftoff.

The seven astronauts on-board Endeavour are studying the far reaches of the universe using the ASTRO-2 observatory, a cluster of three ultra-violet telescopes. Previously, NASA's longest shuttle trip was the 14-day, 18-hour flight by Columbia last summer. If all goes well, this mission will surpass that by 19 hours.

Also on-board the Space Shuttle Endeavour is the Shuttle Amateur Radio Experiment (SAREX). Six of the seven Endeavour astronauts have their ham radio license. These include avid AMSAT supporter Ron Parise, WA4SIR, Commander Steve Oswald, KB5YSR, Pilot Bill Gregory, KC5MGA, Mission Specialist Tammy Jernigan, KC5MGF, Mission Specialist Wendy Lawrence, KC5KII and Payload Specialist Sam Durrance, N3TQA.

Shuttle commander Steve Oswald, KB5YSR

reported at 22 hours 58 minutes into the mission (March 3rd) that he had a good checkout with W5RRR, the Johnson Space Center Amateur Radio Club's ground station. The shuttle crew initially had a problem with receiving their daily mail by fax and mission control kidded that maybe they should send up the messages via SAREX.

SAREX is being flown in configuration "C" on this mission: voice and packet. Operation is on the following Frequencies:

Voice Downlink:

145.55 MHz (Do not transmit on this frequency!)

Voice Uplinks:

144.99, 144.97, 144.95, 144.93 144.91 MHz
(Except Europe)

Voice Uplinks:

144.70, 144.75, 144.80 MHz (Europe only)

Packet Downlink: 145.55 MHz (Call sign: W5RRR-1)

Packet Uplink: 144.49 MHz

A record 26 schools from around the globe are participating in SAREX with scheduled astronaut contacts. Several more are listening in to the school student's question and answer sessions with the astronauts. SAREX operations got underway approximately 24 hours into the flight of Endeavour.

At deadline, SAREX operations on the Space Shuttle Endeavour are proceeding smoothly. The general ham community also reports that the six licensed hams on-board Endeavour have been

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very active on both voice and packet since the beginning of this flight.

At press time, 9 of the 26 schools group contacts have been successfully completed. These include the Tarkington Middle School in Cleveland, Texas, the Chisum Jr./Sr. HS in Paris, Texas, the Cobram Secondary College, in Cobram, Australia, a Group of Scholars in South Africa, the Little Lilly's English School in Bangalore, India, the Lutherville Elementary School in Lutherville, Maryland, the Plymouth Center School in Plymouth, Connecticut, the Kentucky Tech. Vocational School in Mount Sterling, Kentucky, and the Waihe'e Elementary School in Wailuku, Hawaii. The students have prepared well for their 4-8 minute question and answer period with the astronauts.

Many of the students have asked questions directly related to the ASTRO-2 ultraviolet observatory which is the primary payload on the STS-67 mission. Some of the questions related to the complex, astrophysics science that is being conducted on this mission. These include questions on supernova remnants, the physics and properties of blackholes, and the how the astronomy being conducted on the shuttle Endeavour will effect mankind's understanding of the "big bang" theory. Four of the STS-67 crew members have a degree in Astrophysics.

NASA faces severe budget constraints over the next several years. The shuttle program will be particularly hard hit. President Clinton has ordered the agency to cut overall spending by \$5 billion by the year 2000.

In the shuttle program alone, funding has fallen nearly \$1 billion since 1992. During that same time, more than 500 NASA civil service jobs and nearly 4000 contractor jobs have been cut, again all in the shuttle program. The seven Endeavour astronauts have said they believe the shuttle is safe to fly, despite the cut-backs.

(KA3HDO, KC4YER and NQ1R contributed to this story.)

ARRL ASKS FCC TO RECONSIDER VANITY CALL SIGN SELECTION CRITERIA

On March 3rd, the American Radio Relay League filed a *Petition for Reconsideration* requesting that the FCC re-examine and revise a single element of the rules applying to the issuance of vanity call signs in the Amateur Service.

The League wants the Commission "...to require that the call sign requested by an applicant be from the call sign region of the then-current mailing address of the applicant."

The ARRL commended the FCC "...for having initiated a program that is a great benefit to the Amateur Service." They said "We greatly appreciate the

program, and the signal it sends to the licensees that the Commission supports the Amateur Service and its public service communications efforts."

The League, however, said that the FCC departed from the suggestions of many persons commenting on the rulemaking. These commenters and the ARRL are opposed to the policy that "...would permit a licensee to apply for a call sign from any call area block, or a call sign block dedicated to specific island and insular areas, which have traditionally, in general, signified a station location in a specific geographical area. For many years, the Commission's sequential call sign assignment system has been configured such that the mailing address of the license determines what call sign prefix is assigned by the Commission to the licensee."

The FCC was aware of the Leagues wishes and said they carefully considered this suggestion. The Commission said they "...decided, however, not to impose that limitation. Otherwise, the applicant's choice of vanity call signs would be reduced to ten percent or less of the call signs that would otherwise be assignable to the station. A limitation based upon the person's place of residence, moreover, could easily be circumvented by using a mailing address in another call sign region."

The League believes it would be unfair for an amateur in one call area to seize a call sign in another region, "...thus depriving a licensee in the latter call area the opportunity to obtain a desired call sign that reflects his or her geographic location."

The ARRL is also concerned about the impact incurred in assigning certain call sign prefixes that historically have been reserved for outlying locations ...such as Alaska (KL7), Puerto Rico (KP4) and Hawaii (KH6) to amateurs in the continental U.S.

Other than formerly held call signs, the ARRL strongly feels that the Commission should only assign vanity call signs that coincide with the geographical location of the applicants mailing address of record. "...amateurs are, in general, most supportive of the use of call signs as a quick means of determining the general location of a station. ...Because the current sequential call sign assignment system [has] adhered ...to the regional call area system for assignments, there is no reason to depart from it in the vanity call sign system."

The League said it was not their intention to delay the implementation of the vanity call sign system by the filing of this *Petition for Reconsideration*. "The Commission need simply include, in the public notice(s) detailing the procedures of the vanity call sign system ...the requirement that, except for filers in Gate One, all applicants for vanity call sign

assignments must request call signs in the block corresponding to the call area region in which the applicant's license mailing address is located."

"Other than this one change, the League heartily endorses the remainder of the *Report and Order*, and thanks the Commission for a job well done."

Interestingly, on the same day that the FCC received the ARRL's *Petition for Reconsideration*, they released the *Public Notice* detailing how the vanity call sign program would work. There is no requirement that applicants for vanity call signs reside in the geographical area reflected by the chosen call sign. Follows is the *Public Notice* issued last week.

FCC Public Notice No. 52540, March 3, 1995: Amateur Station Vanity Call Sign System

On December 23, 1994, the Federal Communications Commission adopted rules to implement a vanity call sign system in the amateur radio service. The vanity call sign system is being implemented by means of four starting gates.

A public notice will announce the opening of each gate, along with the date when FCC Form 610-V will become available. [Editor's note: The *Paperwork Reduction Act of 1980* requires that all FCC forms be approved by the FCC's Office of Management and Budget. This review normally takes a minimum of 3 months according to an OMB staffer we spoke to on March 6. We were told that the new FCC Form 610-V was received by OMB on February 17th and that it could be summer before it is approved and released.)

The starting gates are:

GATE 1: Any class operator who is applying for:

- A: The call sign that was previously shown in his or her primary station license, or
- B: The call sign that was previously shown on the primary station license of a deceased spouse, child, grandchild, stepchild, parent, grandparent, stepparent, brother, sister, stepbrother, stepsister, aunt, uncle, niece, nephew, or in-law, or
- C: The call sign that was previously shown on the club station license for which the applicant is currently the license trustee.

GATE 2: Any Amateur Extra class operator who is applying for a call sign for his or her primary station or for the club station for which he/she is currently the license trustee.

GATE 3: Any Advanced class operator who is applying for a call sign for his or her primary station or for the club station for which he/she is currently the license trustee.

GATE 4: Any class operator who is applying for

- A: a call sign for his or her primary station or for the club station for which he/she is currently the license trustee.
- B: a call sign that was previously shown on the primary station license of a deceased person and who is acting with the written consent of the deceased person's spouse, child, grandchild, stepchild, parent, grandparent, stepparent, brother, sister, stepbrother, stepsister, aunt, uncle, niece, nephew, or in-law, for the club station for which he/she is currently the license trustee.

- You may request a vanity call sign only when you hold an unexpired amateur operator/primary license document, and where applicable, a club station license document (FCC Form 660).
- Military recreation and RACES stations are not eligible to apply for a vanity call sign.
- If you have recently filed an FCC Form 610 or 610-B for any purpose, you are not eligible to apply for a vanity call sign until you receive your license document.
- Except for GATE 1 and the written consent portion of GATE 4, you may list on Form 610-V one to twenty-five specific call signs in order of your preference. Each call sign must be from the group designated under the sequential call sign system for your, or a lower, operator license class.
- The geographical region designator used in the sequential call sign system is an option left to the applicant.

THE SEQUENTIAL CALL SIGN GROUPS

If you hold an Amateur Extra Class operator license document for example, you can choose from Groups A, B, C or D.

Your current call sign will be vacated from your license. Upon confirming that you are eligible for the first call sign on your list, the license data base as it then exists will be searched. If the call sign is assignable to your station, your license will be modified to show that call sign. Otherwise, the search will be repeated using the other call signs in your order of preference until a call sign is selected. Should no call sign on your list be assignable to your station, the call sign that you vacated will again be shown on your license.

Choose your list of call signs very carefully. List only call signs from the groups for which you operator class is eligible and which you believe are unassigned. Give the exact prefix, numeral, and suffix for each call sign. Do not request call signs in general terms. A request such as "Any call sign with my initials" cannot

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be accommodated. Do not request that a call sign be reserved for future assignment.

The FCC cannot provide current call sign status data. The license database is available from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161, (703) 487-4600 or 1-800-553-NTIS. It is also available from private publishers. However, since vanity call sign requests will be continually accepted and processed, there is no guarantee that a call sign that appears to be available on the license database will be available when your request is processed.

Summary of the Sequential Call Sign System Groups

GROUP A: For stations licensed to Amateur Extra Class operators.

One letter prefix K, N, or W, and two letter suffix

Two letter prefix AA-AL, NA-NZ, KA-KZ, or WA-WZ, and one letter suffix.

Two letter prefix AA-AG, AI, AJ, or AK and two letter suffix.

GROUP B: For stations licensed to Amateur Extra and Advanced Class operators.

Two letter prefix with first letter K, N, or W, and two letter suffix.

Two letter prefix AL, AH, KP, and two letter suffix.

GROUP C: For stations licensed to Amateur Extra, Advanced, General Technician, and Technician Plus operators.

One letter prefix K, N, or W, and three letter suffix.

Two letter prefix KH, KL, NH, NL, NP, WH, or WL, and two letter suffix.

GROUP D: For stations licensed to Amateur Extra, Advanced, General, Technician, Technician Plus, and Novice Class operators and for club stations.

Two letter prefix with first letter K or W, and three letter suffix.

For further information, contact the FCC's Consumer Assistance Branch, 1270 Fairfield Road, Gettysburg, PA 17325-7245 - Tel. 1-800-322-1117 or (717) 337-1212.

Editor's notes:

- Part §2.302 specifically precludes 2 letter/1 digit/3 letter amateur call signs from containing the letter "X" after the digit. The call sign blocks: KA2XAA-KZ9XZZ and WA2XAA-WZ9XZZ are reserved by the FCC for Experimental (non-amateur) stations.

- The following 2-by-3 format call signs: AA1AAA-AL0ZZZ and NA1AAA-NZ0ZZZ are authorized by Part 2 as assignable amateur service call signs, but are NOT available as such under either the sequential or vanity

call sign systems.

- The so-called Group "X" (2-by-3) call sign prefixes which were reserved on March 24, 1978 (but never implemented) for certain types of amateur stations will be available under the vanity call sign system as Group "D" call signs. These are:

RACES	WC1AAA to WC0ZZZ
Club	WK1AAA to WK0ZZZ
Military Recreation	WM1AAA to WM0ZZZ
Repeaters	WR1AAA to WR0ZZZ
Temporary Licenses	WT1AAA to WT0ZZZ

No Group "D" (2-by-3 format) call signs from the WA1AAA to WZ0ZZZ call sign block have ever been issued by the FCC.

FCC Public Notice No. 52262, February 24, 1995 Filing for New Club and Military Recreation Station Licenses

The Commission adopted a Report and Order on December 23, 1994, which allows the resumption of the issuance of new club and military recreation station licenses.

Effective March 24, 1995, the Commission will accept application Form 610B for new club and military recreation station licenses. The current Form 610B may be used by entering "NEW" in Item 1 under "expiration date" until the new version of the Form 610B is released. Mail completed forms to the Federal Communications Commission, 1270 Fairfield Road, Gettysburg, PA 17325-7245.

Editor's notes:

- We are noting an interest on the part of the amateur community in either forming a club or obtaining the FCC Form 610-B for the purpose of obtaining a specific vanity call sign. FCC Form 610-B is available from the W5YI Group Office (P.O. Box 565101, Dallas, Texas 75356) at no cost. Please include a large business size envelope with 32¢ postage.

- Here is what the FCC rules say about club stations:

§ 97.5 Station license required

(b) The types of station licenses are:

(2) A club station license. A club station

license is granted only to the person who is the license trustee designated by an officer of the club. The trustee must be a person who has been granted an Amateur Extra, Advanced, General, Technician Plus, or Technician operator license. The club must be composed of at least two persons and must have a name, a document of organization, management and a primary purpose devoted to amateur service activities consistent with this Part. The club station document is printed on FCC Form 660.

REPLY COMMENTS ON MILLIMETER WAVE BANDS

Last November, the FCC released a *Notice of Proposed Rulemaking* signalling their intent to make 16 GHz of spectrum available between 47.2 and 153 GHz for commercial use. The allocation is proposed to be on a shared basis with existing and future users.

The ARRL is especially interested in this band because the Amateur and Amateur-Satellite Service is allocated 75.5 to 76 GHz on a primary basis and shares 76 to 81 GHz with Government radars. The 76-77 GHz band is currently under consideration for vehicular anti-collision radar systems that are currently being developed by automotive manufacturers.

On March 1st, both the Ford Motor Company and the American Radio Relay League filed reply comments on the FCC's intent to allocate radio frequencies above 40 GHz.

The League pointed out that the Office of Spectrum Management (NTIA) believes that "...U.S. firms will become more competitive in global markets, ...if U.S. spectrum allocations and technical standards are in harmonization with the international marketplace..."

ARRL pointed out that "...major automobile manufacturers [such as Honda, Mitsubishi and Toyota] have established the 59-61 GHz band as being the best spectrum location for anti-collision radar.

The American Automobile Manufacturers Association recognizes that spectrum sharing is important but that safety systems should "...not be degraded." The AAMA wants the 76-77 GHz band exclusively allocated to vehicular radar devices. ARRL said that AAMA did not demonstrate any incompatibility between amateur and vehicular operation, but if there was any from a properly operating amateur station "...then the Commission should not proceed with the allocation in any shared amateur band." Other bands might be considered "...such as the 60-61 GHz band as requested by numerous manufacturers...."

Reply Comments by Ford Motor Co.

Ford applauded the FCC's proposal "...to move forward with allocating spectrum for vehicular radar collision avoidance systems, which hold great promise for saving lives and decreasing the risk of injury due to automobile accidents on the nation's highways.

"However, given the anticipated public safety benefits of vehicular radar systems and the importance of minimizing operational disruptions due to interference from unforeseen and potentially much higher power systems, Ford opposes the proposal of the American Radio Relay League to permit continued use of the 76-77 GHz band by amateurs."

"ARRL's statement that 'protection of vehicular

radio systems would be impossible...' [therefore] Ford believes that no further amateur use of the 76-77 GHz band should be permitted.

"...restricting amateur use to 77-81 GHz rather than 76-81 GHz would not appear to have any detrimental impact on existing amateur operations. ...given the importance of such public safety uses [as collision avoidance systems], other potentially interfering applications, such as amateur radio, should not be permitted even on a secondary basis in vehicular radar bands."

[The following newspaper story concerning STS-67 appeared in The Los Angeles Times on March 10th].

Tension Builds in a Phone Call to Outer Space

By: Maki Becker, Copyright: The Los Angeles Times

All systems were go with the space shuttle amateur radio experiment. All the extra wiring for the telephone lines and the radio antennas had been completed. The three-way teleconference call to Goddard Space Flight Center in Maryland and a San Diego amateur radio station was coming in clearly.

Monitoring the shuttle tracking system, Giamaica Zeidler, 9, pointed out a minor complication: "The tracker is off half a world," she said, then quickly calculated the difference to establish that the shuttle was orbiting over the western coast of Africa at that moment.

The experiment Wednesday night was to make contact with an astronaut aboard the space shuttle Endeavour using amateur, or ham, radio.

The participants were students at Fullbright Avenue Elementary School in Canoga Park, one of 26 schools worldwide and the only one in the Los Angeles Unified School District selected to participate.

For the last four months, the Fullbright students had been researching astronomy, space technology and ham radio operation in preparation for the try Wednesday night.

They had been invited to submit questions they would like to ask the astronauts, and 10 youngsters had been selected to read them.

Doreen Aghajanian, (32, KD6VDR) a fourth- and fifth-grade teacher at Fullbright, was coordinating the contact. A ham radio buff, Aghajanian had arranged the event so that as much of the school community as possible could be involved.

The auditorium was packed with students, parents and teachers Wednesday night, nervously waiting to see if the attempt would succeed.

Aghajanian warned the audience that "This is only an experiment" and that there was a good chance it wouldn't work. Other schools that tried had made contact long enough for only one question, she said.

After about 20 minutes of setting up the call, the San Diego amateur radio station began the attempt to talk with Wendy Lawrence, (KC5KII) the astronaut aboard Endeavour who had the assignment to answer the questions.

In the auditorium, the effort could be heard through a

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public address system. Static was the only response at first. Aghajanian was visibly worried, and the audience waited, silent, nervous.

And contact was made at 8:36 p.m. The first question was asked by Kelly Baxter, 10, who wanted to know if Lawrence had experienced any change in her pulse or blood pressure. Lawrence said she had not.

Next, Ali Sheaffer, 7, asked if there had been any change in Lawrence's body out in space. Lawrence replied that because of the lack of gravity all the fluids that usually settle at her feet were up in her head, making her feel as if she had a cold. She added that her lower back hurt because her spine was stretched out and that she was actually a little taller in space.

One by one, the youngsters asked the astronaut about what it's like to be in space. At 8:42, as Brett Mason, 7, asked his question, the line went dead.

"We are L.O.S." (loss of signal), announced Aghajanian. Jim O'Donnell, a ham operator who helped set up the event with Aghajanian, called the contact "unbelievable."

O'Donnell's son had participated in a similar experiment five years ago and that contact had lasted only a few minutes. "I hadn't heard one like this," he said.

[Two color photographs accompanied the story showed Full-bright Avenue Elementary School students, Rosa Yanez, 9, and Scott Sandman, 11, and Ali Sheaffer, 7, speaking with Endeavour astronaut Wendy Lawrence.]

The following received from ARRL's Dave Sumner, K1ZZ in RESPONSE TO THE STORY IN THE LAST ISSUE ON THE IARU CW AD HOC COMMITTEE REPORT

Fred Maia, W5YI
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Dallas, TX 75356-5101

Dear Fred:

I'm a bit disappointed with your reporting on the IARU CW Ad Hoc Committee report in the March 1 newsletter.

Unless the copy of the report that you have is different from mine, your "We still haven't figured that one out" remark at the top of column 2 on page 1 refers to a typo that you yourself introduced. My copy reads, "Gone are the days when a knowledge of Morse code was considered essential for communication between radio amateurs." Your quote reads, "Gone are the days when a knowledge of Morse code was considered essential for communication between radio amateurs for communication between amateurs." Even if the report were to read as you quoted, it seems to me to be an obvious typo not worth picking on.

If your problem was with understanding the sentence without the typo, it may simply be because this section of the report was written by Fred Johnson, who as a New Zealander expresses himself quite clearly, but in ways that we may not encounter every day in North America. Certainly the report was not written at an elementary school comprehension level. However, it isn't difficult to figure out what is being said. To paraphrase, it is that it has been a long time since it was necessary for a radio amateur to know the Morse code in order to communicate with other (not "all other") amateurs. If

you turn the page to page 4 of the report, you will find a discussion of how codeless VHF licenses have been introduced by many administrations, with the support of the national amateur society, and that many (but not all) of the opportunities for communicating on these frequencies can be enjoyed without a knowledge of Morse code.

What is different about HF, as compared to VHF, is that international communication is the rule rather than the exception. Here it is not sufficient to be able to communicate with some, or even with most, other amateurs. Because we all share a common spectrum resource and (thankfully) are not confined to assigned frequencies, for orderly operation there must be a medium for universal communication. Perhaps someday this need will be satisfied by some other means, but to now, and for the near future, the only such medium that does not require either special equipment or universal knowledge of a common language is the Morse code, along with our system of universal abbreviations.

With regard to ORACLE, it is useful to bear in mind that the only reason that tiny organization exists is because its founders were unable, through normal democratic processes, to persuade their fellow New Zealand amateurs to their point of view. Having failed to achieve their objective through normal channels they chose to try to end-run the process. By contrast, the IARU consists of the national organizations of radio amateurs of 142 countries, with a combined membership of 779,000 individuals. Regional conferences of all three IARU regions have considered the question of the Morse code requirement, as discussed on page 12 of the report, and have found no reason to abandon support of the existing requirement. Of course, not all of the 779,000 members of IARU member-societies agree with this policy, but they all have an opportunity to influence it through their own national organizations.

I am amused by some of ORACLE's responses to the Ad Hoc Committee report. They ought to be embarrassed to offer the English language as a substitute for the universality of Morse. Most radio amateurs do not speak English, nor is there any reason other than ethnocentrism to think they should. The comparison of QSO totals in CW and phone contest results and country totals in DX honor rolls seems irrelevant, although it is interesting that DX contest QSO totals over the past decade or more show steady growth on both modes and that CW shows no sign of declining. (I have not done a study, but would not be surprised to learn that recent growth has been faster on CW than on phone.) The observation that one is more likely to be successful at phone DXing if one speaks English than if one doesn't is interesting in that it highlights the absence of such a bias on CW.

Finally, as to the IARU's alleged "hidden agenda," I know from personal experience that the universal communication rationale was offered at WARC-79 by delegates who were not licensed amateurs. They pointed out that amateurs operating on HF needed to know, at minimum, enough Morse to avoid interfering unknowingly with distress calls. If this rationale has not been articulated more frequently it is only because it should be so obvious as to not require articulation. [Signed:] 73, Sincerely,

David Sumner, K1ZZ, Executive Vice President

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● Global Infohighway Conference -

On Feb. 24-26, representatives from the top seven industrialized nations met in Brussels, Belgium in an attempt to get the world on the information highway.

The G-7 summit (which included the U.K., Canada, France, Germany, Italy, Japan and the United States) agreed to collaborate on technical standards, privacy, property rights, universal access and emerging technology. Representing the United States were Vice President Al Gore, FCC Chairman Reed Hundt and Commerce Secretary Ron Brown.

Several multimedia applications were discussed and demonstrated. Among them were electronic education, libraries, museums, galleries, emergency management, health care and online government and global marketplaces.

Concerns were voiced that less developed countries would be left behind once the richer nations built the information superhighway.

Broadcasting and Cable, March 6, 1995

● **Telcos to enter video programming in a big way.** Four of the Baby Bells (regional telephone companies) have signalled their intention to collectively purchase 4 million "digital entertainment terminals." The interactive TV set boxes will probably have to be rented to consumers due to their high anticipated cost (more than \$500 each.)

Broadcasting and Cable, March 6, 1995

● **America Online continues to be the fastest growing consumer service ...and the most volatile.** Its shares soared 16% March 1st to \$82.25 on the Nasdaq Stock Market as almost four million shares changed hands. Some analysts believe the company is "drastically overvalued" and many investors are betting that the price will fall. Its shares sold for \$30.50 just four months ago. One analyst, however, believes the stock will reach \$100 in 12 months.

AOL (which has two million customers) is now valued at \$1.32 billion ...or \$658 per subscriber. Plans are to expand the service to Europe. Apple Computer owns a minority stake in the service. AOL says "competitive pressures (from new AT&T and Microsoft services) could result in lower pricing..." Some AOL insiders have sold shares. *Wall Street Journal, March 2, 1995*

● **There is big pressure from Congress for the FCC to reduce expenses.**

A couple of weeks ago, word trickled out that major changes were already underway affecting the FCC's field offices and especially their monitoring station system. Some will be closed down. Most, monitoring stations, however, will remain but will be operated with less personnel by remote control - we assume from Washington, DC.

Several FCC employees will retire under civil service "early out" or "buy out" provisions. Others are choosing facilities to which they would like to be transferred.

Although the radio stations will stay, all monitoring station facilities to be essentially closed within the next three years. We were told that "Remote control technology is there to do it."

Some field offices will also shut down. Already the Baltimore office has been incorporated into the Laurel Monitoring Station. The Miami Office is also scheduled to close ...as is Buffalo, NY.

We also heard about the establishment of centralized FCC Public Affairs Office to deal with the civilian population through an 800 telephone number. This will eliminate most of the calls going to each of a multitude of FCC field, monitoring, licensing and headquarters offices located throughout the country. Many of these calls need to be referred elsewhere anyway.

These changes are a result of a study completed by Booz-Allen, Inc., of McLean, Virginia - an outside consultant hired by the FCC to streamline the agency.

● The TOP-TEN results of an Internet study looking into **"What do YOU WANT TO DO on the Internet" - And "What do YOU THINK PEOPLE WANT to do..."** is interesting!

It seems that most people THINK the net should be used to: vote in elections, search reference books, take courses, obtain local school information, participate in opinion polls, obtain government information, get "video-on-demand", search magazines, journals and newspapers ...and obtain legislative voting records and proposed laws/regulations.

But that is not what Net members want to do! They want sex, gambling, fun, sports and chatting. Their top ten: date-by-video, gamble, have role-playing interactions, obtain sports statistics, get sports video-on-demand, obtain local event/marketing information, con-

duct video or text discussion groups, conduct video/telephony conferencing, obtain public records, obtain industry legal-compliance data, and send video/text e-mail to officials.

● **Pres. Clinton has asked Congress to increase the FCC's budget by 20% in 1996** ...including \$25 million to move the agency to an outlying area. The FCC would get \$223.6 million vs. FY-95's \$185.3 million. The \$116 million in user fees would stay at the FY-95 level.

● **The FCC is still auctioning off 60 MHz of spectrum for major market personal communications services. (PCS.)** The bidding has now reached Stage 3 which is designed to bring the bidding to a conclusion.

After 95 rounds, it appears that Sprint (\$1.9 billion) and AT&T (\$1.6 billion) are the big bidders. Sprint has aligned itself with cable-TV interests. The total bid (\$6.7 billion) is about half that expected by the FCC's budget people and the Clinton administration.

An industry study said that by the year 2000, 15 million people will account for \$8.5 billion in PCS revenues. (40 million PCS subscribers will be on board by 2005 ...another 65 million will have cellular phones.)

● **"Last resort" communications becomes "No resort" as U.S. Coast Guard Abandons HF CW service! USCG Master Station "Atlantic/NMN" will cease Morse code operations on April 1st.**

Its historic final message will be transmitted on 01 April 1995 at 0001 UTC (Friday, March 31st at 1901 EST) on four frequencies: 5,870, 8,471, 12,718.5 and 16,976 KHz.

A special certificate will be issued to those copying the closing message. (Submit copy to USCG CAMSLANT, c/o NSGA Northwest, Chesapeake, VA 23322. ATTN: TC3 S. Morales.)

NMN is the only military station on the East Coast still working CW on the HF bands. They broadcast weather and navigation bulletins and daily code practice. Some commercial stations will continue to transmit Morse ...probably until February 1999 when full GMDSS (Global Maritime Distress and Safety System) satellite communications are implemented.

Coast Guard CW stations NMC (San Francisco) and NMO (Honolulu, HI) will also shut down on April 1st.

AMATEUR RADIO CALL SIGNS

...issued as of the first of March 1995:

Radio District	Gp. "A" Extra	Gp. "B" Advan.	Gp. "C" Tech/Gen	Gp. "D" Novice
0 (*)	AA0WM	KG0UD	(***)	KB0RFW
1 (*)	AA1MK	KD1ZZ	N1UKU	KB1BOC
2 (*)	AA2WK	KG2BJ	(***)	KB2TTD
3 (*)	AA3KJ	KE3RS	N3UPB	KB3BGN
4 (*)	AE4EC	KS4QB	(***)	KE4WEV
5 (*)	AC5AZ	KK5LJ	(***)	KC5MXP
6 (*)	AC6KX	KO6QY	(***)	KE6RKO
7 (*)	AB7IK	KJ7KR	(***)	KC7JFS
8 (*)	AA8SN	KG8PM	(***)	KB8YBA
9 (*)	AA9OA	KG9AS	(***)	KB9JFS
N. Mariana Is.	KH0Q	AH0AN	KH0DT	WH0AAX
Guam	WH2L	AH2CZ	KH2NC	WH2ANG
Johnston Is.	AH3D	AH3AD	KH3AG	WH3AAG
Midway Is.		AH4AA	KH4AG	WH4AAH
Hawaii	(**)	AH6NY	(***)	WH6CSX
Kure Is.			KH7AA	
Amer. Samoa	AH8M	AH8AH	KH8CG	WH8ABB
Wake W. Peale	AH9C	AH9AD	KH9AE	WH9AAI
Alaska	(**)	AL7PY	(***)	WL7CLA
Virgin Is.	WP2Q	KP2CD	NP2IA	WP2AHV
Puerto Rico	(**)	KP4YW	(***)	WP4MWU

*= All 2-by-1 "W" prefixed call signs assigned.

**= All Group A (2-by-1) call signs assigned.

***= All Group "C" (N-by-3) call signs assigned.

[Source: FCC, Gettysburg, Pennsylvania]

ARRL COMMENTS ON WORLD RADIO CONFERENCE

The American Radio Relay League has submitted its comments on the upcoming World Radiocommunications Conference that will be held this fall. WRC-95 will be the first conference held under the ITU's new accelerated conference cycle to discuss substantive spectrum allocation and regulatory matters. WRC-95's agenda applies primarily to the Mobile Satellite Service.

The League said that certain MSS proponents have suggested allocation of 13-cm spectrum currently available to the amateur service as candidates for MSS allocations. "The ARRL has regularly opposed the nomination of these bands as MSS candidates."

Referring to the recent elevation of 2390-2400 and 2402-2417 MHz to primary amateur service status: "The [FCC] conclusion was that the best use of the 2390-2400 MHz and 2402-2417 MHz bands was for amateur and Part 15 operation."

The League also commented on an FCC working group's consideration of the 1215-1400 MHz band "...which includes the Amateur Service allocation of 1240-1300 MHz and amateur-satellite allocation of 1260-1270 MHz, as a ...possible MSS allocation at WRC-97. The working group decided against naming candidate bands for study at this time "...deciding in-

stead simply that MSS requires additional allocations." ARRL said "...any additional MSS spectrum requirements can be satisfied in bands outside those allocated to the Amateur and Amateur-Satellite services...."

Worldwide Amateur allocations at 40 meters

"...an important goal of the League and the International Amateur Radio Union (IARU) is to create a worldwide allocation of not less than 300 kHz bandwidth around 7 MHz. Currently, the amateur allocation is 7000-7300 kHz and Region 2 and 7000-7100 kHz in Regions 1 and 3.

"At WARC-92, the United States proposed the realignment of the bands around 7 MHz ...to provide the amateur service a worldwide allocation of 6900-7200 kHz and the broadcasting service an expanded worldwide allocation above 7200 kHz. It was not possible to accomplish the realignment at WARC-92, but Recommendation No. 718 was adopted, which called for a future competent conference to consider the possibility of aligning the allocations of the Amateur Service around 7 MHz [with due regard to the requirements of other services...]

"It is the League's considered assessment that this matter should not be placed on the agenda of a WRC prior to the year 2001. Considering it any earlier would likely defeat the entire purpose of the exercise, given the rate of migration from HF technology for fixed and mobile communications infrastructures of various countries to satellites and cable. Further, the HF broadcast allocations have not been determined in that range. While the matter is of primary interest to radio amateurs worldwide, postponement of consideration on the matter remains the best means to accomplish the goal."

International Amateur Radio Permit (IARP)

"It was initially requested [that the International Amateur Radio Permit be added] as an agenda item for WRC-97. The concept was an international 'roaming' amateur license, by means of which United States' amateur licensees could travel to other countries, and other countries' amateurs could travel to the U.S. and operate amateur stations based on a combination of the amateur license of the visitor's home country and an endorsement based on an international licensing agreement. The United States has entered into ad-hoc bilateral agreements which permit such operation, and the statutory basis for entry by the United States into multilateral agreements is in place..."

The IARU has been promoting the IARP concept in ITU Region 2 by recommending the adoption of the (European) CEPT and the Inter-American CITEL common licenses. "The IARU having gained support within Region 2 for an IARP, continues to urge the inclusion in the agenda for WRC-99 the issue of an international amateur radio permit."

WSYI REPORT

Nation's Oldest Ham Radio Newsletter

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March 15, 1995

"Prior to WRC-99, it will be necessary to hold discussions with CEPT, and perhaps other regional organizations, to reach a common proposal on combining the merits of the CITEL and CEPT systems for visiting radio amateurs."

Single-Sideband HF Broadcasting (HFBC)

In response for input regarding the premise that SSB receivers are not widely available, "are prohibitively expensive" and represent a very small fraction of the HF receiver market, the ARRL said "...there are numerous readily available SSB receivers for HF broadcast bands throughout the world."

While they may be more expensive than the AM receivers that have been around for many years: "That is not to say that they are prohibitively expensive... It has been well-established for years that there should be a phasing out of AM DSB emissions in the HF bands allocated to the Broadcasting Service. ...the use of SSB instead of DSB modulation techniques would lead to improved spectrum utilization..."

"The issue ...is not whether SSB emissions should be required in light of new replacement technologies," ARRL said, "but rather when DSB emissions should be terminated. ...the Amateur Service and most other radio services converted to SSB transmissions many years ago."

Conclusions reached by ARRL:

- (1) The amateur allocations between 1 and 3 GHz are not suitable candidates for Mobile Satellite Services.
- (2) There should be no consideration given to any re-alignment of the 7 MHz band relative to the Amateur Service or HF Broadcasting prior to 2001 since it would be self-defeating.
- (3) Consideration of an International Amateur Radio Permit (IARP) should be scheduled for WRC-99.
- (4) Steps should be taken to encourage conversion of all HF transmissions to spectrum efficient SSB.

The ARRL made no mention of the WRC-95 consideration that will be given to whether or not to delete the wording of Article 34 (RR 2800) that requires Morse code testing for experimental stations. The wording of RR 2800 is very similar to that of RR 2735 - the international law that requires Morse proficiency when amateur operate below 30 MHz.

HAM SUPER HACKER N6NHG ARRESTED BY FBI

America's most sought after computer hacker Kevin David Mitnick, N6NHG is once again behind prison bars. The ham was arrested last month at 1:30 in the morning at his apartment in Raleigh, North Carolina after being traced there electronically by one of his alleged victims, Tsutomu Shimomura, 30, a Japanese computational physicist. Mitnick had stolen several

security programs written by Shimomura from his PC on Christmas day. Shimomura, a computer security specialist from San Diego's Supercomputer Labs made it his goal to find the culprit.

After an intensive two-week electronic manhunt based on information supplied by Shimomura, Mitnick, 31, was taken into custody on Wednesday, Feb. 15th by federal agents assisted by state and local law enforcement authorities.

Using his own computer expertise, Shimomura was able to determine on Saturday, Feb. 12th that Mitnick was operating on-line using a computer and modem connected to a cellular telephone somewhere near Raleigh. Shimomura and investigators were then able to close in on the fugitive ham. At his arraignment, Mitnick turned to Shimomura who was in the North Carolina courtroom and told him, "I respect your skills."

Mitnick, of Van Nuys, California began his hacking career when he was only 17 by breaking into a top secret North American Air Defense Command computer. He was convicted in 1988 at age 25 in a Los Angeles federal court on charges of stealing software from Digital Equipment Corp. and causing some \$4 million in damage to their operations. For that, Mitnick received a one-year prison sentence, part of which was spent in a half-way house. A judge ordered him to participate in a Los Angeles treatment program for compulsive disorders, his diagnosis: "computer addiction." Mitnick vanished from the area in 1992. A federal arrest warrant was issued on charges that he violated the terms of his probation.

While a fugitive Mitnick is alleged to have broken into numerous corporate and communications networks in California, Colorado and North Carolina. Investigators believe Mitnick may have caused damage to numerous files and may have stolen secret information including as many as 20,000 credit card numbers from Netcom, an Internet Service Provider. He is also a suspect in a recent series of high profile security breaches to companies on the Internet.

Mitnick also faces investigation by various state agencies nationwide. He is being held without bail and with very limited telephone access in a North Carolina federal detention facility until the government completes its inquiry in the case. According to *U.S. News and World Report*, Mitnick wants to waive extradition and return to California, where he could face hundreds of thousands of dollars in fines and decades in prison. The Feb. 27th *Wall Street Journal* ran a 5-column story on Mitnick. It said Mitnick is considered a "legend," a "technology wielding genius" and a "hero" by his fans on the Internet. Some of his followers believe that hackers like Mitnick perform a public service on the Internet by pointing out its weaknesses.

(WA6ITF contributed to this article.)

COMPUTER VIRUSES LINKED TO LIFE ITSELF

The February issue of "Wired" magazine has a very lengthy, interesting, thought-provoking (and, yes, scary) story on viruses. Unlike biological viruses, computer viruses are a product of our culture ...the conscious effort of human beings. We normally consider these self-replicating "digital organisms" to be destructive. The author contends that overcoming the fear of computer viruses may be an important step toward the future of information processing.

There are three types of virus writers: scientists interested in the behavior of self-replicating code, developers interested in harnessing the power of self-replicating programs ...and of course, those renegades of the virus writing underground who get their kicks by damaging or erasing code.

Not all virus writers are bad. One such writer, Mark Ludwig, of Tucson, Arizona has a PhD in physics from the University of Arizona. He completed his undergraduate work at MIT in just two years. His obsession is contagious programs running loose in machines.

To him, computer viruses behave like living things and he set about creating them, studying them ...and trying to understand them. At first he tried to obtain specimens from the anti-virus community, but they refused to release captured virus code to anyone outside of the A-V industry.

To solve that problem, Ludwig set up a BBS and offered a \$25 bounty for every virus uploaded to him. That resulted in his *The Little Black Book of Viruses*, a 1991 technical primer on virus writing - complete with warnings against misuse and how to keep them from being distributed. Not everyone appreciated his effort.

Ludwig also established an annual international virus writing competition and a newsletter, the *Computer Virus Developments Quarterly*. In 1993, he self-published another book, *Computer Viruses, Artificial Life, and Evolution* - 373 pages that link self-reproducing computer code to the workings of life.

He argues that computer viruses are synthetic life that are evolving to increasing levels of sophistication (and immunity) by the anti-virus countermeasures who stalk them. His development of the "*Darwinian Genetic Mutation Engine*" allows the environment to reshape the internal code thus lifting computer viruses from the digital equivalent of graffiti to almost lifelike behavior. "He transformed a tool of vandals into a field of scientific study..."

Another researcher from the University of Delaware, Tom Ray (now a visiting scholar at the Advanced Telecommunications Research Institute International in Kyoto, Japan) specializes in virus "worm" breeding. "Worms" are self-reproducing programs able to ex-

cute its code independent of any host program. He has the support of his university employer and the financial backing of major corporations. Initially, his ultimate goal was to infect global computer networks with self-replicating digital germs capable of evolving into useful organisms. Ray scrapped that idea as being too risky. Instead, he cultivated and raised his mutant digital creatures inside a simulated "phantom" computer equipped with a death function which could terminate the program if needed.

Once unleashed, the "worm" eventually evolved into "lean" parasitic viruses by borrowing and improving reproductive code from larger programs. Serious scholars of biology soon began to take note of Ray's work. An unexpected benefit was high-quality, self-written software. Could this inhuman skill have practical applications? Ray felt certain that digital evolution had the potential to write software far beyond the capabilities of human programmers. Another computer scientist, Fred Cohen also proved that viruses are potentially useful as all-purpose code-creating devices.

Ray has never given up on his idea to colonize the "global wilderness" of the Net. He wrote up his idea last year in a document entitled "*A Proposal to Create a Network-Wide Biodiversity Reserve for Digital Organisms*." He is confident that when his "one celled" simple self-replicating organisms encounter the immensity of the Net, that they will rise to the occasion and evolve into multicellular creatures "...thus setting off the dreamed of Big Bang of complex digi-biotic diversity." He foresees digital biologists as being similar to tropical biologists who explore organic jungles. Some interesting information processes could be captured and brought into laboratories for closer study and to "farms" for breeding.

A corporation called General Magic makes a hand-held communicating device that relies on a new network program language called "Telescript." It has the backing of such firms as AT&T, Apple, Sony and Matsushita (Panasonic.)

Telescript has the capability to "...flit about in cyberspace on your behalf visiting remote commercial sites to buy, sell and trade information for you, and generally behaving themselves with all the decorum you'd expect from a personal valet."

Both wild viruses and Telescript "agents" go from one computer to another and can run on the computers they travel to. "Trying to imagine the marvels that pour forth once you've successfully tapped a computer as elaborate as the Net is as futile as trying to map the future of a society, or of a life - or of life itself."

"...in the end, the meaning of our long-term coexistence with computer viruses may prove difficult to distinguish from the meaning of our own existence."